AMENDMENTS TO THE SPECIFICATION:

Please replace paragraph 1 on page 10 (lines 17-21) and ending on page 11 (lines 1-19) with the following amended paragraph:

In accordance with an aspect of the invention, the saturable reactor is in series either with the primary or secondary windings of the transformer to accomplish the delay in the pulses for the purposes of balancing the capacitors that are used to pulse the primary windings at the output of the inverter. Another alternative use of the saturable reactor is in a matrix transformer M for an electric arc welder shown in FIGURE 2 and including a power source 120 having a primary winding 122 which is pulsed by switches Q1, Q2 and switches Q3 and Q4 in accordance with standard technology. In the matrix arrangement, the matrix transformers 130, 132 and 134 include individual coupling cores 124, 126 and 128, respectively. These cores couple pulsed winding 122 to several secondaries, three of which are illustrated. Since each of the secondaries and its rectifier are the same, only secondary 130 and rectifier 140 will be explained. This explanation applies to the other secondaries and rectifiers <u>142 and 144</u> constituting matrix transformer M. Rectifier 140 includes input leads 150, 152 and an output lead 154 which is the positive terminal. The pulsed input to secondary windings 160, 162 provide a positive terminal which is the summation of the three leads 154 from the three secondaries. The negative terminal is center tap 164. As explained before, opposite polarity output leads 154, 164 are, preferably, connected to an output switch network as show in Stava 6,489,592. Thus, the welding installation represented by electrode E and workpiece W with choke 170 is operated in an AC welding mode, a DC positive welding mode or a DC negative welding mode. This switching network, which is used in the preferred embodiment of the invention, need only be incorporated by reference from the Stava patent and not illustrated in the preferred embodiment. The individual secondary circuits include their own saturable reactors SR1, SR2 and SR3, respectively. Some times only one secondary has the reactor. Each of the three illustrated saturable reactors are soft ferrite rings, illustrated as including a tubular configuration surrounding input leads 150, 152 of rectifier 140. Each of these saturable reactors delay the voltage pulses in the input winding to allow balance of the capacitors 30, 32 shown in FIGURE 1.

Please replace paragraph 1 on page 13 (lines 9-21) and ending on page 14 (lines 1-

15) with the following amended paragraph:

The volt second product of saturable reactor SR is proportional to the cross-sectional area and the type of magnetic material used. The primary voltage of a power source using an inverter for electric arc welding is typically much higher than the voltage required for the actual welding operation. Consequently, the transformers in welding machines have a turns ratio that is typically in the range of 8:1 to 3:1. Locating the saturable reactors SR in the secondary circuit is preferred since the lower voltage side of the transformer is in the secondary circuits ~~130-134~~ 130, 132 and 134. Consequently, the most efficient use of the magnetic core material of the saturable reactor is in the secondary network. Of course, the saturable reactor is used in the high voltage side of the transformer by being applied around the leads to primary winding 122. In practice, a saturable reactor may be passive or controlled. In the present invention, the reactor is composed of a magnetic ring core that is placed over the primary or secondary leads of the transformer. In accordance with the invention, the saturable reactor does not include a control winding that influences the time when saturation and desaturation occurs. Saturation is at a flux density less than about 0.4 Telsa and is fixed by the material and dimensions of the saturable reactor around leads 150, 152 as shown in FIGURE 2. In normal practice, a saturable reactor in a switching context is chosen with a "square loop material." This is defined as "hard ferrite" and shown by the B-H curve 300 in FIGURE 7. This square loop material has a high saturation flux density indicated to be about 1.0 Telsa or 10 kilo Gauss. Such hard ferrite material is employed in switching saturable reactors because the hysterises losses are low due to narrow B-H curve 300. The core losses are selected to be low so that the saturable reactor can tolerate hard saturation at high switching frequencies experienced in balanced switch supplies. Such high permeability magnetic material is desirable when control windings are used for the reactor, because a small control current can hold the core in its saturated state. Such hard ferrite materials also have a crisp switching characteristic due to the square shape of the B-H curve. Various commercial materials are available to include a hard ferrite square loop material with a curve 300. However, the present invention uses a soft ferrite material having a soft B-H curve 302, as shown in FIGURE 7. The soft ferrite materials are designed to have relatively low permeability requiring high magnetizing current to achieve saturation. The saturation flux density in accordance with the present invention is relatively low, typically

about 0.3 Telsa.

Please amend the BRIEF DESCRIPTION OF DRAWINGS section as follows:

FIGURE 12 is a pancake shaped saturable reactor with aluminum disks to dissipate heat; ~~and,~~

FIGURE 13 is a cross-sectional view taken generally along line 13-13 of FIGURE 12~~.~~; and,

FIGURE 14 shows a saturable reactor with a rectangular cross-section with a length greater than its thickness.

Please replace paragraph 1 on page 18 (lines 8-11) with the following amended paragraph:

In practice, the shape of the saturable reactor has a rectangular cross-section with a length T greater than the thickness, which is the difference between the inside diameter and the outside diameter, as shown in FIGURE 14. The cross-section is a rectangle with a width T greater than its height which is (OD-ID)/2. This shape is shown generally at point x in FIGURE 9.